

What is claimed is:

1. An apparatus for performing a pilot synchronization operation in a wireless communication system, the apparatus comprising:
 - 5 a plurality of sliding correlators that each receives a portion of a received correlation sequence and provides a partial correlation output;
 - an absolute value block that takes the absolute value of each partial correlation output; and
 - 10 circuitry that combines the absolute values of each of the partial correlation outputs to form a correlation output.
2. The apparatus set forth in claim 1, wherein each of the plurality of sliding correlators receives a portion of a stored correlation sequence for comparison to the portion of the received correlation sequence.
- 15 3. The apparatus set forth in claim 1, wherein the correlation output comprises a correlation peak.
4. The apparatus set forth in claim 3, wherein the correlation peak corresponds to a Primary SCH channel.
- 20 5. The apparatus set forth in claim 3, wherein the correlation peak corresponds to a Secondary SCH channel.
- 25 6. The apparatus set forth in claim 1, wherein the apparatus comprises a portion of a code division multiple access receiver.
7. The apparatus set forth in claim 1, wherein the apparatus comprises a portion of a receiver that complies with the Universal Mobile Telecommunications System ("UMTS") Wideband Code Division Multiple Access ("WCDMA") standard.
- 30 8. The apparatus set forth in claim 1, wherein the apparatus comprises at least a portion of a cell search block.

9. A code division multiple access ("CDMA") receiver, comprising:
an analog-to-digital converter that receives a CDMA signal and converts the CDMA signal into a digital signal:
a matched filter that filters the digital signal to produce a filtered digital signal;
5 a tapped delay line that receives the filtered digital signal and produces a delayed filtered digital signal; and
a cell search block, comprising:
a plurality of sliding correlators that each receives at least a portion of the delayed filtered digital signal and provides a partial correlation output;
10 an absolute value block that takes the absolute value of each partial correlation output; and
circuitry that combines the absolute values of each of the partial correlation outputs to form a correlation output.
- 15 10. The CDMA receiver set forth in claim 9, wherein each of the plurality of sliding correlators receives a portion of a stored correlation sequence for comparison to the portion of the received correlation sequence.
- 20 11. The CDMA receiver set forth in claim 9, wherein the correlation output comprises a correlation peak.
12. The CDMA receiver set forth in claim 11, wherein the correlation peak corresponds to a Primary SCH channel.
- 25 13. The CDMA receiver set forth in claim 11, wherein the correlation peak corresponds to a Secondary SCH channel.
14. The CDMA receiver set forth in claim 9, wherein the apparatus comprises a portion of a code division multiple access receiver.
- 30 15. The CDMA receiver set forth in claim 9, wherein the CDMA receiver complies with the Universal Mobile Telecommunications System ("UMTS") Wideband Code Division Multiple Access ("WCDMA") standard.

16. A method for forming a correlation output in a wireless communication system, the method comprising:

receiving a correlation sequence to produce a received correlation sequence;

segmenting the received correlation sequence into a plurality of partial

5 correlation sequences;

comparing each partial correlation sequence to a portion of a stored correlation sequence;

producing a partial correlation output based on the comparison of each partial correlation sequence to the corresponding stored correlation sequence;

10 determining the absolute value of each partial correlation output; and

combining the absolute values of each of the partial correlation outputs to form a correlation output.

17. The method set forth in claim 16, comprising identifying a correlation peak in
15 the correlation output.

18. The method set forth in claim 17, comprising identifying a Primary SCH channel based on the correlation peak.

20 19. The method set forth in claim 17, comprising identifying a Secondary SCH channel based on the correlation peak.

20. The method set forth in claim 16, wherein the recited acts are performed in the recited order.